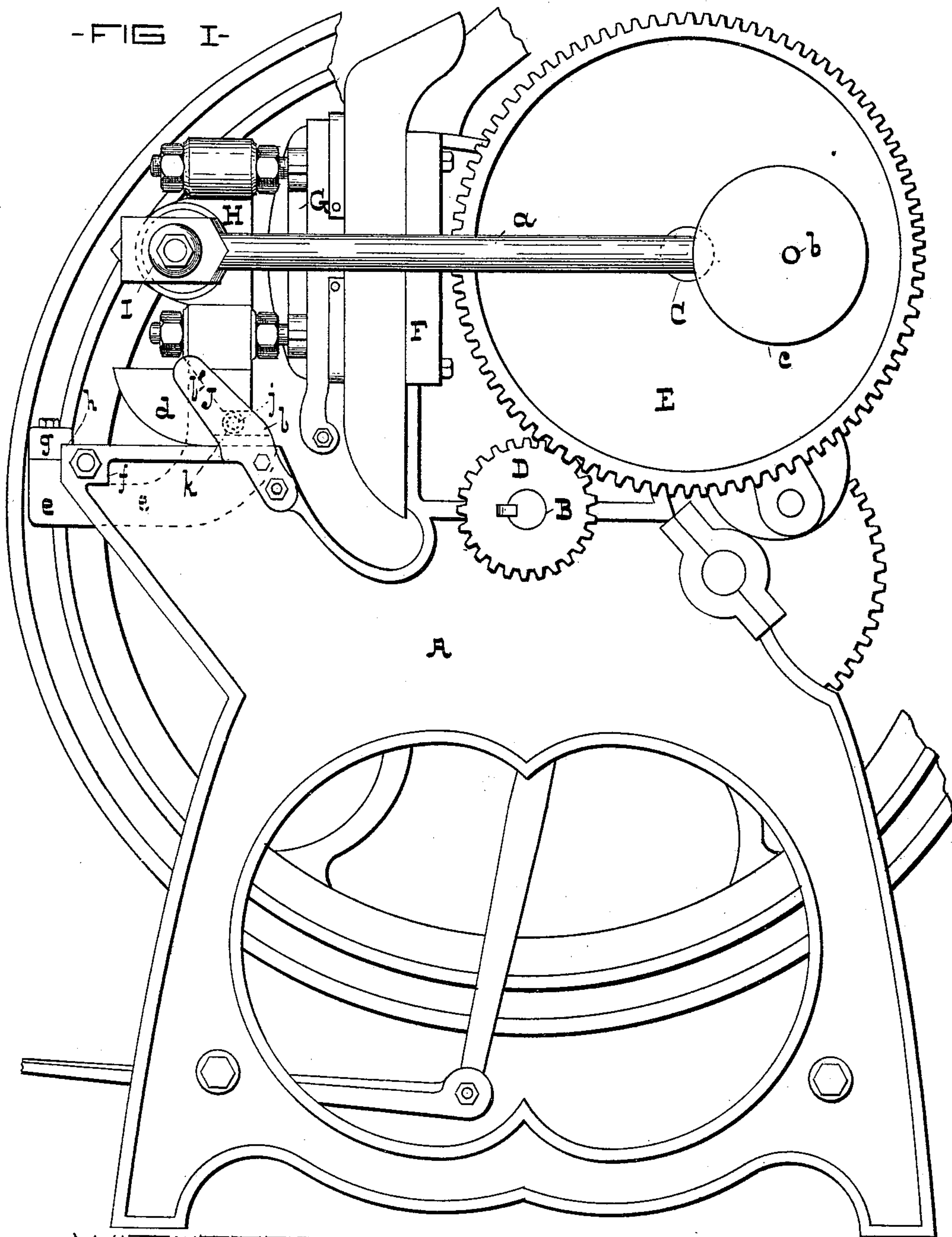


2 Sheets—Sheet 1.

No. 405,832.

Patented June 25, 1889.

-FIG I-



-WITNESSES-

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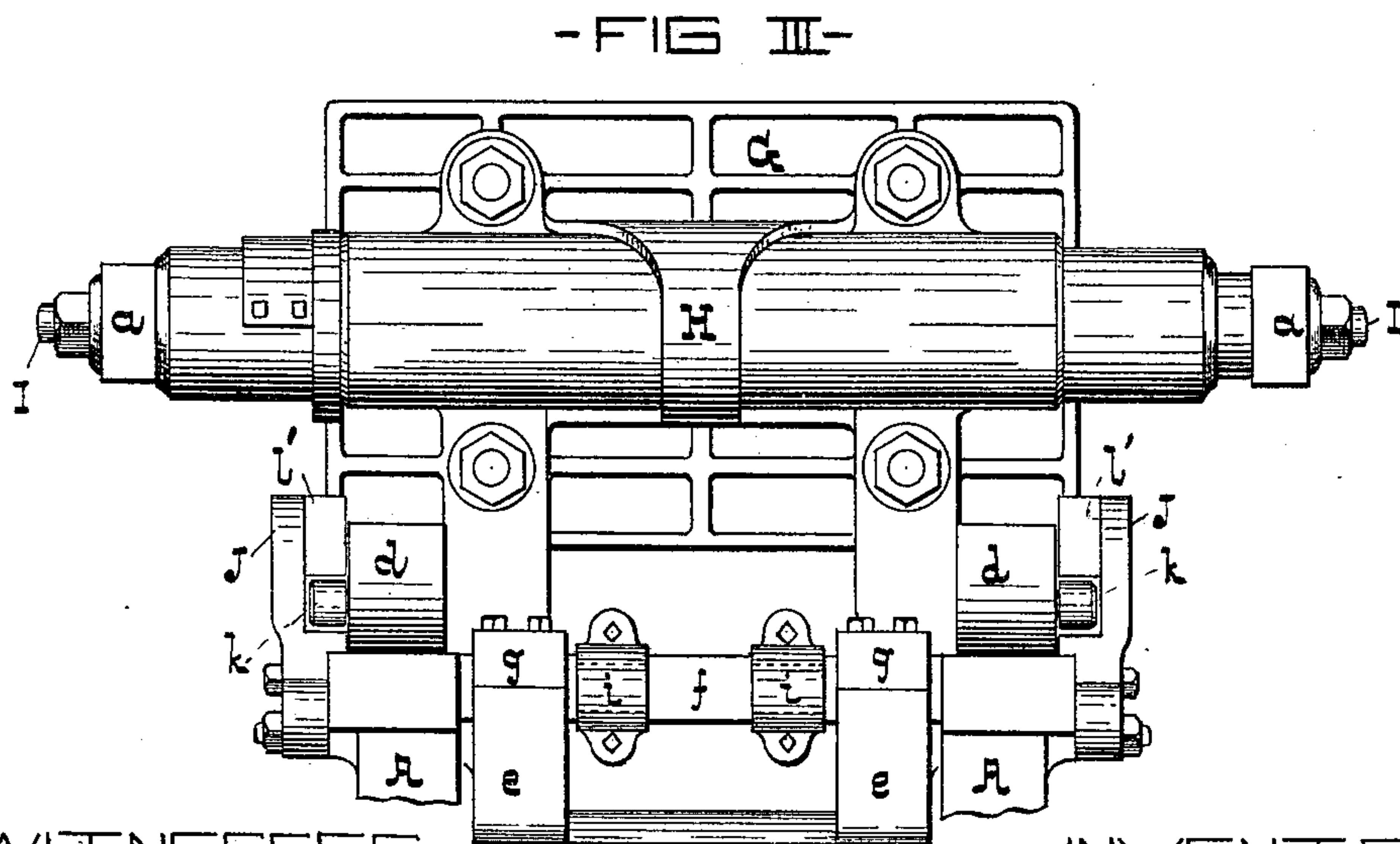
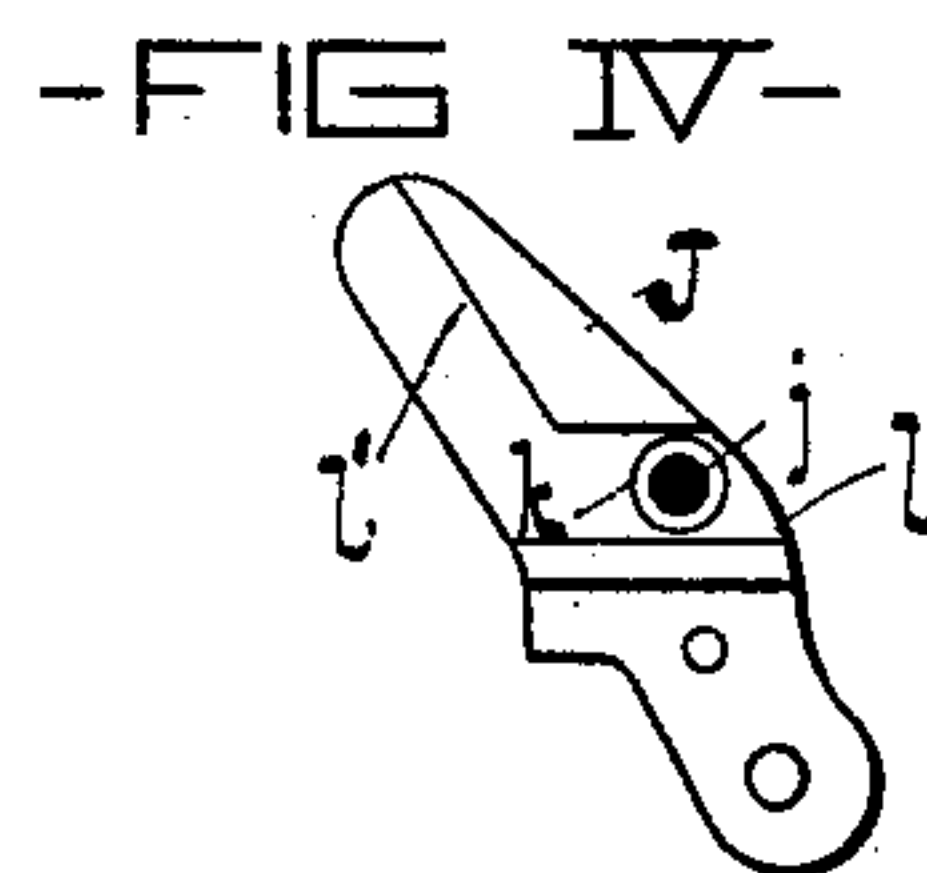
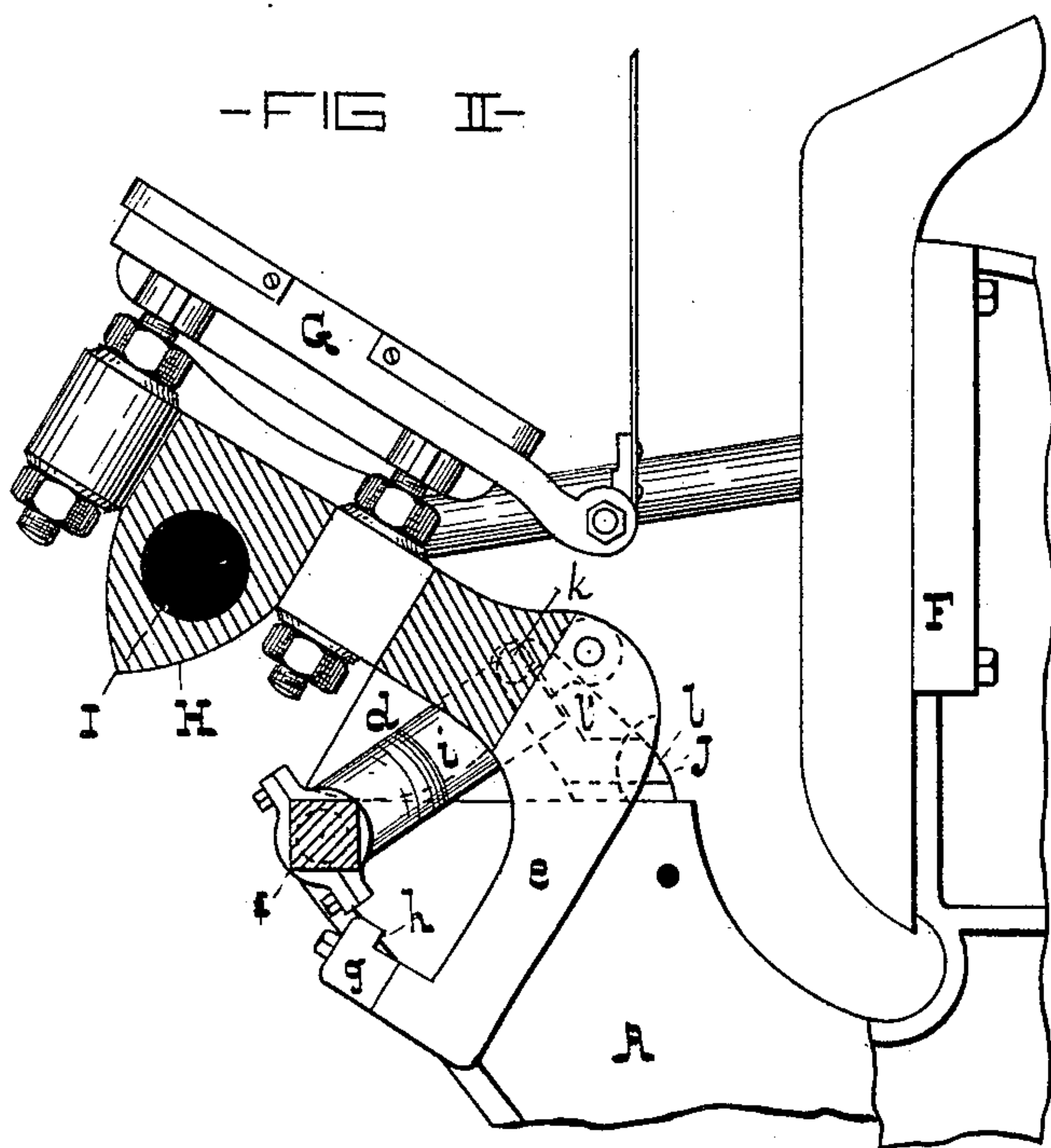
(No Model.)

2 Sheets—Sheet 2..

J. F. W. DORMAN.  
PRINTING PRESS.

No. 405,832.

Patented June 25, 1889.



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# UNITED STATES PATENT OFFICE.

JOHN F. W. DORMAN, OF BALTIMORE, MARYLAND.

## PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 405,832, dated June 25, 1889.

Application filed October 29, 1887. Serial No. 253,698. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. W. DORMAN, of the city of Baltimore and State of Maryland, have invented certain Improvements in Printing-Presses, of which the following is a specification.

This invention relates to certain improvements in a locking device to firmly hold the platen and bridge in place while the impression is being made, and to counteract the tendency of the platen to tilt when the type or form is placed either above or below the center of the bed.

It further relates to means for guiding the movement of the bridge during the locking operation, as will hereinafter fully appear.

In the further description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure I is an exterior side elevation of certain parts of a printing-press embodying my improvements. Fig. II is a sectional side elevation of certain parts of the improved press. Fig. III is a front view of Fig. I with certain parts thereof removed. Fig. IV is a side view of a part of the invention.

Similar letters of reference indicate similar parts of the invention in all the views.

In the said drawings, A is the frame of the press, and B the driving-shaft, to which power is applied.

C is the shaft from which the bridge, hereinafter described, receives its motion, and it is driven from the shaft B through the medium of the gears D and E.

F is the bed of the press, and G the platen, which in construction differs in no essential particulars from those usually employed in printing-presses.

H is the bridge, and I the front shaft, adapted to turn in the bridge, and to the ends of which the draw-bars *a* are attached. These draw-bars connect the front shaft with pins *b* in the gear-wheel E, and at the point of connection between the said bars and the gear E are employed cams or grooved disks *c*, the construction of which is common and requires no description herein. The bridge H is provided with rockers *d*, which rest and rock on the frame A, and also with extensions *e*, which, in connection with a bar *f*,

forms a lock, hereinafter more particularly described.

The bar *f* is confined between and connects the two sides of the frame A, (see Figs. II and III,) and the extensions *e* of the bridge are furnished with cap-pieces *g*, having lips *h*, adapted to fit over the upper side of the said bar. (See particularly Figs. I and II.) In the latter figure the bridge is shown as tilted back, and the extensions with the caps disconnected from the bar *f*.

The tilting motion of the bridge is usually obtained by means of a rod *i*, which unites that device with the bar *f*, and in order to admit of the locking of the bridge as pressure is applied and the face of the platen brought in contact with the form, this rod *i* is made extensible and a spring employed to cause it to assume its normal length when pressure is removed and the bridge thrown back. This extensible spring-bar is effective as long as the spring therein is unimpaired; but should the spring be broken there is nothing to make the bridge rock on the frame and bring the platen into a vertical position or prevent its sliding forward and coming in contact with the bed and breaking the press. To obviate this difficulty, I provide the outer side of the rockers of the bridge with pins *j*, carrying rollers *k*, and the frame with the lugs J, which have each a horizontal groove *l* and an inclined straight face *l'* extending therefrom. The said grooves extend toward the bed of the press, and the inclined straight faces *l'* fall back from the point at which they intersect the said grooves. (See particularly Figs. II and IV.) Supposing the bridge to be in the position shown in Fig. II, the rollers *k* bear against the inclined faces *l'* of the lugs J. In the movement of the bridge and platen toward the bed the pins and rollers descend the inclined straight face, and finally, as the bridge and platen assume a vertical position, enter the grooves *l*, and remain in them until the impression is made. During the last part of the horizontal movement of the rollers in the grooves *l* the lips *h* of the caps *g* on the extensions *e* of the bridge are drawn over the bar *f*, and the bottom side of the bar comes in contact with the upper face of the extensions. By this arrangement the bridge is firmly locked. The



extensible bar *i*, while not necessary to effect the proper movement of the bridge when the rollers and grooved lugs are employed, serves to steady the movement of the bridge, and by the action of the spring in the said rod the weight of the bridge while in its lowest position is counterbalanced.

From the foregoing it will be seen that the bridge, which is generally guided in its rocking or tilting movement by means of the extensible bar *i*, has with my present invention a positive movement, which is not dependent upon the action of any spring mechanism, and therefore not liable to disarrangement, the said spring-bar being used merely as an auxiliary device, which may be removed without materially affecting the action of the press.

By having the caps *g* bolted to the extensions *e* any slack motion occasioned by wear of the lips *h*, the upper faces of the extensions *e*, or the bar *f* can be easily taken up by filing or planing the under face of the caps or the upper face of the part of the extensions on which the said caps rest.

I am aware that an enforced tilting motion of the bridge of a printing-press has been obtained by means of a guide-plate extending downward from the bridge, having therein a slot, one part of which is curved and the other and lower portion straight, and a stud which projects from the side of the table or frame. As the bridge is thrown back, this plate traverses the stud, which insures a true rolling action of the rockers. In this construction the curve of the slot must bear a

certain relation to that of the rocker, and the tilting of the bridge is necessarily gradual. With my straight inclined faces the tilting is effected suddenly, and the platen is sooner brought to an inclined position, so that the sheet to be printed may be placed thereon.

I am further aware that it is not new in a printing-press to provide the rocker with an ear having lugs adapted to be drawn over a portion of the frame, and thereby form a lock.

I claim as my invention—

1. In a printing-press, the frame thereof having lugs provided on their inner sides with grooves and inclined straight faces leading therefrom, as shown, combined with the bridge having rockers which rest on the said frame, and pins carrying rollers which rest in the said lugs, and, as the bridge carrying the platen is drawn toward the bed of the press, follow the said inclined straight faces to the said grooves, which they enter, and thereby bring the bridge and platen into a vertical position and hold them in said position while the impression is being made, substantially as and for the purpose specified.

2. The bridge *H*, having the extensions *c*, provided with the removable cap-pieces *g*, having the lips *h*, substantially as and for the purpose specified,

JOHN F. W. DORMAN.

Witnesses:

DANL. FISHER,  
JNO. T. MADDOX.